CLEAN CLAIMS

1. A system for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, comprising:

a filter to remove the desired signal and thereby provide a filtered signal representative of the jammer signal; and

an adder circuit to receive the combined signal and the filtered signal to thereby remove the jammer signal therefrom.

2. The system of claim 1 for use with a receiver to receive a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal, further comprising:

a mixer coupled to an output of the adder to convert RF input signals to a selected lower frequency wherein the filter operates at the selected lower frequency to remove the desired signal; and

an up-mixer coupled to the filter to convert the filtered signal to the selected RF, the adder operating at the RF to remove the jammer signal.

3. The system of claim 2 wherein the wireless communication circuit is a quadrature circuit and the mixer is a quadrature mixer core, the filter comprising first and second filter portions to filter first and second quadrature components, respectively, and thereby generate first and second filtered signal portions, respectively, the up-mixer comprising first and second quadrature up-mixer portions to convert the first and second signal portions to the selected RF, and a summer coupled to the first and second quadrature up-mixer portions to combine the converted first and second signal portions.

4. The system of claim 1, further comprising:

a receiver to receive a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal;

a down-mixer to convert the received RF signal to a selected lower frequency, the filter operating at the selected lower frequency to remove the desired signal; and

an up-mixer coupled to the filter to convert the filtered signal to the selected RF, the adder operating at the selected RF to remove the jammer signal and generating an output signal that is coupled to the mixer core.

5. The system of claim 4 wherein the wireless communication circuit is a quadrature circuit and the mixer is a quadrature mixer core, the down-mixer comprising first and second down-mixer portions to convert the received RF signal to first and second quadrature components at the selected lower frequency, the filter comprising first and second filter portions to filter first and second quadrature components, respectively, and thereby generate first and second filtered signal portions, respectively, the up-mixer comprising first and second quadrature up-mixer portions to convert the first and second filtered signal portions to the selected RF, and a summer coupled to the first and second quadrature up-mixer portions to combine the converted first and second signal portions.

6. The system of claim 5, further comprising:

a splitter to split the combined converted signal into two signals for quadrature processing, the adder circuit comprising first and second adder portions with the first adder portion adding a first of the two split signals and the combined signal and the second adder portion adding a second of the two split signals and the combined signal.

7. The system of claim 1 wherein the adder circuit comprises a positive and negative input, the combined signal being coupled to the positive input and the filtered signal being coupled to the negative input.

8. The system of claim 1 wherein the filter operates at baseband, the filter being a high-pass filter.

9. The system of claim 1 wherein the filter is an analog filter.

10. The system of claim 1 wherein the wireless communication unit has a specified operational bandwidth and the filter has a filter bandwidth based on the operational bandwidth.

11. A circuit for the reduction of distortion in a communication circuit having a combined signal including a desired signal and a jammer signal, comprising:

means for filtering the combined signal to remove the desired signal and thereby provide a filtered signal representative of the jammer signal; and

means for adding the combined signal and the filtered signal to remove the jammer signal therefrom.

12. The circuit of claim 11 for use with a receiver configured to receive a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal and a down-converter configured to convert the received RF signal to a selected lower frequency, the means for filtering the combined signal at the selected lower frequency to remove the desired signal, the circuit further comprising means for converting the filtered signal to the selected RF

wherein the means for adding comprises means for adding the RF signal, containing the desired signal and the jammer signal, and the filtered converted signal.

13. The circuit of claim 12 wherein the communication circuit is a quadrature circuit and the mixer core is a quadrature mixer core that generates first and second quadrature components

wherein the means for filtering comprises means for filtering the first and second quadrature components to thereby generate first and second filtered signal portions, respectively, and the means for converting comprising means for converting the first and second filtered signal portions to the selected RF, the circuit further comprising means for combining the converted first and second signal portions.

14. A circuit for the reduction of distortion in a receiver configured to receive a radio frequency (RF) signal at a selected RF, the received RF signal being a combined signal containing a desired signal and a jammer signal and a down-converter configured to convert the received RF signal to a selected lower frequency, the circuit comprising:

means for filtering the combined signal at the selected lower frequency to remove the desired signal;

means for converting the filtered signal to the selected RF; and

means for adding the received RF signal and the filtered RF signal to remove the jammer signal.

15. The circuit of claim 14 wherein the communication circuit is a quadrature circuit and the down-converter is a quadrature down-converter that generates first and second quadrature components at the selected lower frequency

wherein the means for filtering comprises means for filtering first and second quadrature components, respectively, to thereby generate first and second filtered signal portions, respectively, and the means for converting comprising means for converting the first and second filtered signal portions to the selected RF, the circuit further comprising means for combining the converted first and second signal portions.

16. The circuit of claim 15 wherein the means for adding comprises coupling the received RF signal to a positive input of an adder and coupling the filtered signal to a negative input of the adder.

17. The circuit of claim 14 wherein the means for filtering comprises a highpass filter operating at baseband.

18. The circuit of claim 14 wherein the means for filtering comprises an analog filter.

19. The circuit of claim 14 wherein the receiver has a specified operational bandwidth and the means for filtering uses a filter bandwidth based on the operational bandwidth.

20. A method for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, the method comprising:

filtering the combined signal to remove the desired signal and thereby provide a filtered signal representative of the jammer signal; and

adding the combined signal and the filtered signal to remove the jammer signal therefrom.

21. The method of claim 20, further comprising:

receiving a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal;

converting the added signal to a selected lower frequency, the filtering comprising filtering at the selected lower frequency to remove the desired signal; and

converting the filtered signal to the selected RF wherein adding the combined signal and the filtered signal comprises adding the RF signal, containing the desired signal and the jammer signal, and the filtered converted signal.

22. The method of claim 20, further comprising:

receiving a radio frequency (RF) signal at a selected RF, the received RF signal containing the desired signal and the jammer signal;

converting the received RF signal to a selected lower frequency wherein the filtering comprises filtering the combined signal at the selected lower frequency to remove the desired signal; and

converting the filtered signal to the selected RF, wherein the adding comprises adding the received RF signal and the filtered RF signal to remove the jammer signal.

23. The method of claim 22 wherein the wireless communication circuit is a quadrature circuit and converting comprises converting the received RF signal to first and second quadrature components at the selected lower frequency, filtering comprises filtering the first and second quadrature components, respectively, to

thereby generate first and second filtered signal portions, respectively, and converting comprises converting the first and second filtered signal portions to the selected RF, the method further comprising combining the converted first and second filtered signal portions.

24. The method of claim 23, further comprising:

splitting the combined converted filtered signal portions into two signals for quadrature processing wherein the adding comprises adding a first of the two split signals and the combined signal and adding a second of the two split signals and the combined signal.

25. The system of claim 20 wherein adding comprises coupling the combined signal to a positive input of an adder and coupling the filtered signal to a negative input of the adder.

26. The method of claim 20 wherein the filtering is highpass filtering operating at baseband.

27. The method of claim 20 wherein the filtering is performed by an analog filter.

28. The method of claim 20 wherein the wireless communication circuit has a specified operational bandwidth and filtering uses a filter bandwidth based on the operational bandwidth.

29. A system for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, comprising:

a radio frequency (RF) stage having an input configured to receive an RF signal and an output;

an adder having first and second inputs and an output, the first input coupled to the RF stage output;

a mixer having an input, an output and an oscillator input, the input being coupled to the adder output;

a filter having an input and an output, the filter input being coupled to the mixer output; and

an up-mixer having an input, an output and an oscillator input, the up-mixer input coupled to the filter output and the up-mixer output coupled to the second adder input.

30. The circuit of claim 29 wherein the wireless communication circuit is a quadrature circuit, the circuit further comprising:

a splitter having an input and first and second outputs, the splitter input coupled to the adder output;

the mixer comprising first and second mixer cores, each mixer core having an input, an output and an oscillator input, the first and second mixer inputs coupled to the first and second splitter outputs, respectively;

the filter comprising first and second filter portions, each filter portion having an input and an output, the first and second filter inputs being coupled to the mixer first and second mixer outputs, respectively;

the up-mixer comprising first and second up-mixer portions, each up-mixer portion having an input, an output and an oscillator input, the first and second filter up-mixer inputs coupled to the first and second filter outputs, respectively; and

a summer having first and second inputs and an output, the first and second inputs coupled to the first and second up-mixer outputs, respectively and the summer output coupled to the second adder input.

31. A system for the reduction of distortion in a wireless communication circuit having a combined signal including a desired signal and a jammer signal, comprising:

a radio frequency (RF) stage having an input configured to receive an RF signal and an output;

an adder having first and second inputs and an output, the first input coupled to the RF stage output;

a mixer having an input, an output and an oscillator input, the input being coupled to the RF stage output;

a filter having an input and an output, the filter input being coupled to the mixer output; and

an up-mixer having an input, an output and an oscillator input, the up-mixer input coupled to the filter output and the up-mixer output coupled to the second adder input.

32. The circuit of claim 31 wherein the wireless communication circuit is a quadrature circuit, the circuit further comprising:

a four-way splitter having an input and first, second, third and fourth outputs, the four-way splitter input coupled to the RF stage output;

the mixer comprising first and second mixer cores, each mixer core having an input, an output and an oscillator input, the first and second mixer inputs coupled to the first and second four-way splitter outputs, respectively;

the filter comprising first and second filter portions, each filter portion having an input and an output, the first and second filter inputs being coupled to the mixer first and second mixer outputs, respectively;

the up-mixer comprising first and second up-mixer portions, each up-mixer portion having an input, an output and an oscillator input, the first and second filter up-mixer inputs coupled to the first and second filter outputs, respectively;

a summer having first and second inputs and an output, the first and second inputs coupled to the first and second up-mixer outputs, respectively;

a two-way splitter having an input and first and second outputs, the input coupled to the summer output; and

the adder comprising first and second adder portions, each adder portion having first and second inputs and an output, the first inputs of the first and second adder portions being coupled to the first and second two-way splitter outputs, respectively, and the second inputs of the first and second adder portions being coupled to the third and fourth four-way splitter outputs, respectively.

33. The circuit of claim 32 wherein the four-way splitter generates an output signal at the first and second outputs related to a gain factor and the signal at the four-way splitter input.

34. The circuit of claim 33 wherein the four-way splitter generates an output signal at the third and fourth outputs inversely related to the gain factor and the signal at the four-way splitter input.